UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virgina 22313-1450

NOTICE OF ALLOWANCE AND FEE(S) DUE

22850 7590 96202011 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA. VA 22314 EXAMINER
BERNSHTEYN, MICHAEL

ART UNIT PAPER NUMBER

DATE MAILED: 06/20/2011

 APPLICATION NO.
 FILING DATE
 FIRST NAMED INVENTOR
 ATTORNEY DOCKET NO.
 CONFRMATION NO.

 10/550/025
 09/23/2005
 Seiji Tanimsto
 277/03/01/09/PCT
 7360

 $\hbox{\it TITLE OF INVENTION: (METH)} A CRYLIC RESIN EMULSION AND PROCESS FOR PRODUCING THE SAME$

| APPLN. TYPE | SMALL ENTITY | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|----------------|--------------|---------------|---------------------|----------------------|------------------|------------|
| nonprovisional | NO | \$1510 | \$300 | \$0 | \$1810 | 09/20/2011 |

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 1SI. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

IL PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail

Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450 or Fax (571)-273-2885

| INSTRUCTIONS: This appropriate. All further indicated unless correcte maintenance fee notifical | form should be used f correspondence includir ed below or directed off tions | for transmitting the ISSU og the Patent, advance of nerwise in Block 1, by (a | JE FEE and PUBLICAT) rders and notification of r a) specifying a new corres | ON FEE (if require naintenance fees wil spondence address; a | ed). Blocks 1 through 5 If be mailed to the curren and/or (b) indicating a ser | should be completed where t correspondence address as arate "FEE ADDRESS" for | | |
|--|---|---|--|---|---|---|--|--|
| CURRENT CORRESPONDI | ENCE ADDRESS (Note: Use Bi | | Feet pape have | s) Transmittal. This ers. Each additional e its own certificate o | certificate cannot be used paper, such as an assignm of mailing or transmission. | or domestic mailings of the for any other accompanying ent or formal drawing, must | | |
| OBLON, SPIV 1940 DUKE STI ALEXANDRIA | 'AK, MCCLELLA REET | AND MAIER & N | EUSTADT, L.L.P. I he Stat addi tran | Certi reby certify that this es Postal Service wir essed to the Mail : smitted to the USPT | ficate of Mailing or Tran Fee(s) Transmittal is bein th sufficient postage for fi Stop ISSUE FEE address O (571) 273-2885, on the d | smission g deposited with the United st class mail in an envelope above, or being facsimile ate indicated below. | | |
| | | | | | | (Depositor's name) | | |
| | | | | | | (Signature) | | |
| | | | | | | (Date) | | |
| APPLICATION NO. | APPLICATION NO. FILING DATE | | FIRST NAMED INVENTOR | | ATTORNEY DOCKET NO. | | | |
| 10/550,025 | 09/23/2005 | | Seiji Tanimoto | 277030US0PCT | | 7360 | | |
| | | | PROCESS FOR PRODUC | | | | | |
| APPLN, TYPE | SMALL ENTITY | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE | , , , | | | |
| nonprovisional | NO | \$1510 | \$300 | \$0 | \$1810 | 09/20/2011 | | |
| EXAM | INER | ART UNIT | CLASS-SUBCLASS | | | | | |
| BERNSHTEY | N, MICHAEL | 1762 | 524-556000 | | | | | |
| 1. Change of correspondence address or indication of "Fee Address" (7 CFR. 1.53). ☐ Change of correspondence address for Change of Correspondence Address form PTO/SB/122) attached. ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/12, We 0.0-120 or more recent) attached. Use of a Customer Number is required. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON PLASE, NOTE: Unless an assignee is identified below, no assign ercordation as set forth in 3 CFR 3.11. Completion of this form in St. | | | or agents OR, alternative (2) the name of a single registered attorney or a 2 registered patent atto listed, no name will be THE PATENT (print or type) | 1) the names of up to 3 registered patent attorneys 1 2) the name of a single firm (having at a member a 2 2-registered attorney or agent) and the names of up to registered patent attorneys or agent and the names of up to registered patent attorneys or agents. If no name is 3 3-registered patent attorneys or agents. If no name is 3 2-registered patent attorneys or agents. If no name is 3 2-registered patent attorneys or agents. If no name is 3 3-registered patent attorneys or agents. If no name is 3 2-registered patent attorneys or agents. If no name is 3 3-registered patent attorneys or agents. If no name is 3 3-registered patent attorneys or agents attorneys or agents. If no name is 3 3-registered patent attorneys or agents attorneys | | | | |
| (A) NAME OF ASSIG | GNEE iate assignee category or | categories (will not be pr | (B) RESIDENCE: (CITY | and STATE OR CO | OUNTRY) poration or other private gr | oup entity Government | | |
| 4a. The following fee(s): Issue Fee Publication Fee (N Advance Order - # | o small entity discount p | | Aparent of Fec(s): (Please first reapply any previously paid issue fee shown above) A check is enclosed. Payment by credit card. Form PTO-2038 is attached. The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overspowners, to Deposit Account Number (enclose an extra copy of this form). | | | | | |
| 5. Change in Entity Star | | | Division of the | | | WD 1 077 1/00 | | |
| | s SMALL ENTITY state d Publication Fee (if req- records of the United Sta | | | | ENTITY status. See 37 C tered attorney or agent; or t | he assignee or other party in | | |
| Authorized Signature | | | | | | | | |
| Typed or printed name | | | Registration No. | | | | | |
| This collection of inform an application. Confident submitting the completed this form and/or suggesti Box 1450, Alexandria, V Alexandria, Virginia 223 | ation is required by 37 C tiality is governed by 35 1 application form to the ons for reducing this but firginia 22313-1450. DO 13-1450. | FR 1.311. The informatic U.S.C. 122 and 37 CFR USPTO. Time will vary rden, should be sent to the NOT SEND FEES OR O | on is required to obtain or r 1.14. This collection is est depending upon the indiv e Chief Information Office COMPLETED FORMS TO | etain a benefit by the imated to take 12 m idual case. Any con rr, U.S. Patent and T D THIS ADDRESS. | e public which is to file (ar inutes to complete, includi iments on the amount of t rademark Office, U.S. Dep SEND TO: Commissioner | d by the USPTO to process) ng gathering, preparing, and me you require to complete sartment of Commerce, P.O. for Patents, P.O. Box 1450, | | |

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

OMB 0651-0033



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450

 APPLICATION NO.
 FILING DATE
 FIRST NAMED INVENTOR
 ATTORNEY DOCKIET NO.
 CONFIRMATION NO.

 10/550,025
 09/2M/2005
 Seiji Tanimoto
 277030US0PCT
 7360

22850 7590 06202011 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA. VA 22314 EXAMINER
BERNSHTEYN, MICHAEL

ART UNIT PAPER NUMBER

DATE MAILED: 06/20/2011

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 399 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 399 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

- The information on this form will be treated confidentially to the extent allowed under the Freedom
 of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of
 records may be disclosed to the Department of Justice to determine whether disclosure of these
 records is required by the Freedom of Information Act.
- A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement neeotiations.
- 3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
- 4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
- 5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
- A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
- 7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals
- 8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
- A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Application No. Applicant(s) 10/550 025 TANIMOTO ET AL. Notice of Allowability Evaminer Art Unit MICHAEL M RERNSHTEYN 1762 -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTQL-85) or other appropriate communication will be mailed in due course. THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS. This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFB 1.313 and MPEP 1308. This communication is responsive to 06/02/2011. The allowed claim(s) is/are 14, 15, 17-19,23,27 and 31-40. 3. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) 🖾 All b) Some* c) None of the: 1. A Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No. _____. 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)). * Certified copies not received: _____. Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. THIS THREE-MONTH PERIOD IS NOT EXTENDABLE. 4. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient. 5. CORRECTED DRAWINGS (as "replacement sheets") must be submitted. (a) Including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached 1) Thereto or 2) To Paper No./Mail Date (b) I including changes required by the attached Examiner's Amendment / Comment or in the Office action of Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d). 6. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL. Attachment(s) 1. Notice of References Cited (PTO-892) 5. Notice of Informal Patent Application 2. Notice of Draftperson's Patent Drawing Review (PTO-948) Interview Summary (PTO-413), Paper No./Mail Date Information Disclosure Statements (PTO/SB/08). T Examiner's Amendment/Comment Paper No./Mail Date 4. T Examiner's Comment Regarding Requirement for Deposit 8. X Examiner's Statement of Reasons for Allowance of Biological Material 9. ☐ Other

/MICHAEL M. BERNSHTEYN/ Primary Examiner, Art Unit 1762 Application/Control Number: 10/550,025 Page 2

Art Unit: 1762

DETAILED ACTION

This Office Action follows a response filed on June 2, 2011. Claims 14, 15, 18,
 23 and 27 have been amended; claim 1-5, 13, 16, 20-22, 24-26 and 29-32 have been cancelled; claims 31-40 have been added

- 2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 2, 2011 has been entered.
- 3. In view of amendment(s) and remarks the rejection of claims 1-5, 13-27, 29 and 30 under 35 U.S.C. 103(a) as being unpatentable over Kim et al. "Poly(vinyl alcohol) Stabilization of Acrylic Emulsion Polymers Using the Miniemulsion Approach", *Macromolecules*, 2003; 36 (15), p. 5573-5579) in view of Tanimoto et al. (U. S. Patent 6,495,623) has been withdrawn.
- 4. Claims 14, 15, 17-19, 23, 27 and 31-40 are pending.

Allowable Subject Matter

- Claim 14, 15, 17-19, 23, 27 and 31-40 are allowed.
- 6. The following is examiner's statement of reasons for allowance:

The present claims are allowable over the closest references: Kim et al.

"Poly(yinv| alcohol) Stabilization of Acrylic Emulsion Polymers Using the Miniemulsion

Application/Control Number: 10/550,025

Art Unit: 1762

Approach", *Macromolecules*, **2003**; 36 (15), p. 5573-5579) and Tanimoto et al. (U. S. Patent 6.495.623).

Kim discloses a method for producing a (meth) acrylic resin emulsion. The recipe used to prepare the various miniemulsions comprising several different formulation components is shown in Table 1. PVA was dissolved by heating at 90 °C for 3 h in deionized water (ca. 6 wt %), and the solution was filtered using a 200 mesh screen. The solids content of the PVA solution was determined gravimetrically and adjusted to 5.9 wt % by adding deionized water.

Miniemulsions stabilized with HD. A specific amount of HD was mixed with the monomers (BA and MMA). An aqueous PVA solution and DI water were then added to the monomer mixture and stirred for 10 min to prepare a crude emulsion for 10 min prior to subjecting the system to high shear.

Miniemulsions stabilized with CA. A specific amount of CA was mixed with the PVA solution and DI water and then stirred for 2 h at 70 °C. After cooling, undissolved CA particles were found for the higher amounts of CA (0.833 and 1.744 g). Monomers were added and stirred with a magnetic bar for 24 h to completely dissolve the CA particles and to obtain a good crude emulsion. The crude emulsions with HD or CA were sonified using a Branson Sonifier (model 450) at a 70% duty cycle and a power setting of 8 for 10 min accompanied by continuous magnetic stirring in an ice bath. All miniemulsion polymerizations were performed in a 500 ml four-neck flask equipped with a reflux condenser, nitrogen gas inlet tube, and Teflon stirrer (-200 rpm) for 24 h at 60 °C (page 5575).

Application/Control Number: 10/550,025

Art Unit: 1762

Tanimoto discloses a method for producing the (meth) acrylic resin emulsion comprising emulsion (co)polymerization of at least one monomer selected from acrylate monomers and methacrylate monomers, and a vinyl alcohol polymer having at least 1.9 mol% of 1,2-glycol bonds, and a degree of polymerization of from 100 to 2000 and using a redox-type polymerization initiator that comprises a peroxide and a reducing agent (col. 7, lines 62 through col. 8, line 20, col. 13, line 54 through col. 14, line 27, Example 1, col. 22, line 48 through col. 23, line 7, etc.).

However, Kim et al. and Tanimoto et al. do not disclose or fairly suggest the claimed method for producing a (meth)acrylic resin emulsion comprising: redox emulsion (co)polymerizing at least one monomer selected from the group consisting of an acrylate monomer and a methacrylate monomer, and, optionally, a further copolymerizable monomer in the presence of a vinyl alcohol polymer dispersant and a iron compound operable as a catalyst, said vinyl alcohol polymer dispersant having a degree of saponification of from 80 to 95 mol% and a degree of polymerization of from 400 to 2000, particularly said emulsion (co)polymerizing comprising:

- i) feeding into a reactor at an initial stage (1) an iron compound, (2) the monomers, (3) the vinyl alcohol polymer to form a polymerizing system and (4) a reducing agent selected from the group consisting of L(+)-tartaric acid, sodium L(+)-tartrate, and a combination thereof, and
- ii) continuously or intermittently adding to said polymerizing system a peroxide,
 wherein said acrylate monomer is <u>n-butyl acrylate</u> and said methacrylate
 monomer is <u>methyl methacrylate</u>, as per newly amended claim 14.

Application/Control Number: 10/550,025

Art Unit: 1762

7. As of the date of this Notice of Allowability, the Examiner has not located or identified any reference that can be used singularly or in combination with another reference including Kim et al. and Tanimoto et al. to render the present invention anticipated or obvious to one of ordinary skill in the art.

In the light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delay, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reason for Allowance".

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL M. BERNSHTEYN whose telephone number is (571)272-2411. The examiner can normally be reached on M-Th 8-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1762

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael M. Bernshteyn Primary Examiner Art Unit 1762

/Michael M. Bernshteyn/ Primary Examiner, Art Unit 1762